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# A Perspective on Strategic Nuclear Deterrence in the New World Order

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## ABSTRACT

For over 40 years, American nuclear strategy reflected a bi-polar world view. While the Cold War is over, the former Soviet Union remains the sole threat of a cataclysmic nuclear attack and we see emerging Third World capabilities. The post-Cold War world promises to be complicated, more volatile, and less predictable.

While the strategic mission is largely unchanged, the threat, arms control, and budget realities are dramatically changed. It is time, to conduct a review of the purpose, character, size, and composition of US strategic forces. This paper suggests our deterrence philosophy is sound. We have the opportunity to create a stable deterrence at substantially reduced force levels. But, we need to change the way we do business in Europe, the Third World, in space, and in our planning and targeting.

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## THE STRATEGIC NUCLEAR EQUATION

Overview: On January 3, 1983, President Reagan convened the President's Commission on Strategic Forces and tasked Chairman Brent Scowcroft to review "the purpose, character, size, and composition of the strategic forces of the United States."<sup>1</sup>

While, the strategic mission is largely unchanged, the threat, arms control, and budget realities are dramatically changed. It is time to conduct, and the aim of this paper, an end to end review of the purpose, character, size, and composition of US strategic forces with the objective of developing a cohesive vision of the post-2000 world and the role of strategic forces.

New World Order - Fact or Aspiration: If one defines the threat as capability multiplied times will and ability, then yes the strategic environment is dramatically changed. While the former Soviet Union faces a formidable task in using offensive forces, we should not fool ourselves into a false sense of complacency. The forces we now say are fragmented by the breakup of the Warsaw Pact/Soviet Union, or negotiated away in conventional or nuclear arms control agreements, represent a significant potential and are still largely in existence. The key task our nation faces is to develop a vision of the strategic nuclear world we prefer to live in ten years from now and coordinate the use of all elements

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<sup>1</sup>Scowcroft, Brent L., et al. Report of the President's Commission On Strategic Forces. The White House, 6 April 1983, p. 1.

of national power to create that desired world.

The security environment our nation operates in is radically improved. The Warsaw Pact is dismantled and the USSR's Eastern European satellites are sovereign nations. The former Soviet Union has withdrawn its forces from Hungary and Czechoslovakia and will remove forces in Germany and Poland by 1994.<sup>2</sup>

Arms control negotiations continue to enhance stability and security. Previous agreements such as the Stockholm Conference on Disarmament in Europe (CDE) agreement of 1988, the Intermediate Nuclear Forces (INF) Treaty of 1987, and the Conference on Security and Cooperation in Europe (CSCE) agreements and confidence and security-building measures of 1990 balanced military forces and enhanced mutual confidence.

The 1991 Strategic Arms Reduction Talks (START) Treaty increased stability through substantial and balanced strategic force reductions. Further reductions will be pursued following President Bush's September 1991 initiative. The 1990 Treaty on Conventional Armed Forces in Europe (CFE) will remove NATO numerical inferiority in key areas. An Open Skies regime would enhance predictability and mutual confidence.<sup>3</sup>

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<sup>2</sup>The Alliance's New Strategic Concept. Rome Press Communiqué S-1(91)85, 7 Nov 1991, p 1.

<sup>3</sup>Ibid., P 2.

US National Interests: The fundamental strategic nuclear national interest is the survival of our nation and our allies, with our fundamental institutions and values intact. The US seeks to deter armed aggression of any kind that threatens the security of the US and its allies. Should deterrence fail, we must be prepared to defeat military attack and end the conflict on terms favorable to the US and its allies.<sup>4</sup>

Detering nuclear attack will remain the number one US defense priority.<sup>5</sup> Nuclear war involving few or many nuclear weapons would be a tragedy of unparalleled scope. A massive conventional war with modern non-nuclear technology would also be tremendously destructive. And, conventional war between nations is the most likely way for nuclear war to develop. Therefore, we must deter nuclear war, of any kind, as well as large conventional wars.<sup>6</sup>

It is in the US national interest that we and our allies remain free from the use of weapons of mass destruction as a means of coercion, international blackmail, or terrorism. It is also in our interest to reduce where possible the incentive to shoot first (because of a perceived advantage to be gained) in a

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<sup>4</sup>National Security Strategy of the United States. The White House, Aug 1991, p 3.

<sup>5</sup>Ibid., p 25.

<sup>6</sup>Scowcroft, Brent L., et al. Report of the President's Commission On Strategic Forces. The White House, 6 April 1983, pp 1-2.



crisis. It is important that we move toward reducing the value and importance of individual strategic platforms.<sup>7</sup>

It is in the US interest to limit where possible the proliferation of the technologies needed for weapons of mass destruction and ballistic missile technologies needed to deliver weapons of mass destruction. We should also be concerned about the welfare and potential emigration of former USSR nuclear scientists to third world countries with nuclear programs.

It is in our interest to have only one nuclear capable former USSR republic. The US should also seek stable, balanced, verifiable nuclear arms reductions.<sup>8</sup> Finally, through research and effective arms control, the US should decide where we should and should not compete in the areas of new technology.

Threats to US Interests: The threat of a simultaneous, Warsaw Pact attack on all NATO European fronts is gone. The risk of a surprise attack in central Europe is substantially reduced. The former USSR remains a substantial military power. But, the CFE treaty serves to balance forces and NATO has the technology edge.

The INF treaty eliminated all US and former USSR intermediate

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<sup>7</sup>Ibid., p 3.

<sup>8</sup>National Security Strategy of the United States. The White House, Aug 1991, p 3.

range ballistic and cruise missiles. The President's September 1991 initiative, would eliminate all short range ground-based tactical nuclear weapons. At the conclusion of these initiatives, the only in-theater nuclear weapons in peace-time would be on dual capable aircraft. In a crisis, short range ground and sea based systems could be returned to the theater.

The former USSR maintains a formidable strategic nuclear capability. Former USSR strategic forces remain the "backbone of Soviet military might and, by their existence, will continue to pose an immediate threat to the US." The Soviet Triad of strategic forces consists of an unbalanced triad of forces.<sup>9</sup>

ICBMs carry 59 percent of their warheads split between 53 percent in silos and 6 percent mobile. Day-to-day most ICBMs are on alert, but only a fraction of the mobile missiles are dispersed. About 33 percent of former USSR warheads are deployed on SLBMs. Day-to day, few submarines are deployed at-sea, but boats are capable of launching SLBMs from port. Bombers only carry 8 percent of the warheads and are not on alert day-to-day.<sup>10</sup>

Under the recently signed START treaty these weapons are to be reduced to 6000 accountable weapons on no more that 1600 delivery

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<sup>9</sup>Military Forces In Transition. US Department of Defense, 1991, p 30.

<sup>10</sup>Ibid., pp 31-33, 42.

vehicles. The former USSR must reduce heavy ICBMs (SS-18's) by 50 percent and cannot maintain more than 4800 ballistic (ICBM or SLBM) warheads. Since the START treaty only counts a penetrating bomber as one accountable weapon, we can expect the bomber leg of the former USSR forces to play an increasingly important role.

Four former republics possess strategic nuclear weapons. Russia contains the vast majority (1035 ICBMs, 70 bombers, and 59 submarines) of the weapons.<sup>11</sup> Boris Yeltsin recently announced his plans to take off alert 600 land and sea-based missiles carrying 1250 warheads. Additionally, Russia has eliminated or is preparing to eliminate 130 missile silos.<sup>12</sup> It is unclear where these weapons are located or which missiles are involved.

In August 1991, the Ukraine (176 ICBMs and 30 bombers) wished to be a non-nuclear zone, but threatened to retain tactical weapons for negotiating leverage. Kazakhstan with three SS-18 fields (104 ICBMs) and several key nuclear facilities, and Byelorussia (72 ICBMs) had not finalized their nuclear futures.<sup>13</sup> The Ukraine agreed to stop maintaining all strategic weapons on alert, to move nuclear equipped bombers to Russia, and to disable

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<sup>11</sup>Military Forces In Transition. US Department of Defense, 1991, p 32.

<sup>12</sup>Goshko, John M. "Yeltsin Urges Deep Cuts in Nuclear Arsenal." The Washington Post 30 Jan 1992. pp A1, A18.

<sup>13</sup>"Rule May Be Answer In Fight To Control Arsenal." The London Times 28 Aug 1991, p 22.

all tactical weapons and withdraw them to Russia.<sup>14</sup>

In December 1991, the Commonwealth agreed to transfer to Russia by July 1992 all tactical and short-range nuclear weapons.<sup>15</sup>

But, the final resolution of this issue will depend on the result of on-going security negotiations and external assurances of protection. By 6 February 1992, all four strategic nuclear former republics tentatively agreed to central control and to dismantle all weapons outside of Russia by the end of the decade.

As of March 1992, the Ukraine halted transfers and has no chance of meeting the July target. Kazakhstan completed shipments, but is having second thoughts about ICBMs. Byelorussia is tempted to follow the Ukrainian example. In addition to security concerns, Ukrainian motives include assurances of weapon destruction, a greater share of the \$400 million US financial assistance, and a desire for 70 percent of the resulting uranium.<sup>16</sup>

France, the United Kingdom, and China all maintain small strategic nuclear forces. India tested a nuclear bomb in 1974

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<sup>14</sup>Smith, R. Jeffrey. "Ukraine Plans to Speed Removal of A-Weapons." The Washington Post 20 Dec 1991, p A1.

<sup>15</sup>Smith, R. Jeffrey. "Russia To Be Sole Nuclear Republic." The Washington Post 6 Feb 1992, p A1.

<sup>16</sup>Hiat, Fred. "Commonwealth Faces Unstable Future." The Washington Post 22 Mar 1992, p A1.

but maintains its nuclear program is peaceful.<sup>17</sup> Pakistan has the ability to make at least one bomb and India is believed capable of deploying weapons quickly. Nuclear diplomacy in South Asia will continue to be frustrated by old regional enmities and uncertainties about the post-Cold War world order.<sup>18</sup>

By the year 2000, as many as 20 nations could have ballistic missile technology. Israel, India, Pakistan, Iraq, and Iran, will most likely have a small (less than 100) tactical nuclear capability. As many as 30 nations could have chemical and 10 will be able to deploy biological weapons.<sup>19</sup>

Future threats will be local instabilities arising from the serious economic, social, and political problems (including ethnic rivalries and territorial disputes) faced by many central and east European countries. These conflicts were largely held in check in the former bi-polar world. World-wide, conflicts are increasingly likely, and with high technology, increasingly dangerous.<sup>20</sup> These conflicts will not go away and will always

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<sup>17</sup>Coll, Steve. "India Pressured On Bomb." The Washington Post 9 February 1992, p A23.

<sup>18</sup>Coll, Steve. "US Nuclear Diplomacy in South Asia Faces Obstacles." The Washington Post 8 Feb 1992, p A15.

<sup>19</sup>National Security Council White Paper. National Security Strategy Exercise, Industrial College of the Armed Forces, 1992, p 1.

<sup>20</sup>Worner, Dr Manfred, NATO's Changing Role In A New Security Order. International Defense Review, July 1991, pp 751-754.\_

be the source of potential large-scale conventional wars and present the threat of theater use of weapons of mass destruction.

Budget Realities: The President's September 1991 initiative combined with his FY 93 budget codifies the following strategic force structure realities. In the ICBM leg of the Triad, Peacekeeper Rail Garrison is canceled, production of Peacekeeper test missiles is stopped, Peacekeeper in Minuteman silos would be removed and Minuteman III would be down-loaded to one warhead if the former USSR eliminates all MIRVed ICBMS, Minuteman II is off of quick reaction alert and will be phased out by the late 1990's, and the Small ICBM program is canceled.<sup>21</sup>

In the bomber leg of the Triad, bombers are removed from peacetime strip alert (about one-third of the aircraft), the B-2 program stops at 20 vice 75, the Advanced Cruise Missile (ACM) program stops at 640 vice 1000, and B-1 and B-52H's will be modernized to improve nuclear and conventional capabilities.<sup>22</sup>

In the SLBM leg of the Triad, the Trident submarine program stops at 18 boats. The US will cease production of new, more powerful, warheads for the Trident II (D-5) missile. SLBM loading will be

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<sup>21</sup>"The State of the Union." The Washington Post 29 Jan 1992, p A14.

<sup>22</sup>Toth, Robert C. "Hard Bargaining Ahead on A-Arms." Los Angeles Times (Wash Ed) 30 Jan 1992. p 3.

reduced in conjunction with De-MIRVing of Soviet forces.<sup>23</sup>

## STRATEGIC NUCLEAR POLICY - A NEW LOOK

The Essence of Deterrence: The key to deterrence is unchanged.

We must convince a would be adversary that they cannot attain their national objectives through the use or threatened use of nuclear weapons. But, what is the best way to do this?

Traditionally, deterrence is maintained through the threat of massive retaliation against the Soviet Union. Now, we need to embrace a new strategy prepared for smaller inventories and numerous uncertainties arising from former USSR states, Third World countries, and elsewhere.<sup>24</sup> In developing a new strategy, it is time to tap the inherent strengths of a balanced Triad of strategic forces and look at a two sided equation.

US strategic force structure needs to convince a potential adversary first that they could not successfully attack the US (Attack Uncertainty) and second that if they did attack the US we would respond with an attack that would unacceptably damage what they hold most near and dear (Retaliation Certainty).

Recently, the Joint Strategic Planning Staff Advisory Group

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<sup>23</sup>"The State of the Union." The Washington Post 29 Jan 1992, p A14.

<sup>24</sup>"Toward a New Nuclear Strategy." The Washington Post 7 Jan 1992, p A14.

"rejected the thesis that the only purpose of nuclear weapons in the new world order is to deter nuclear attack...nuclear weapons have a number of important and subtle influences, and remain a significant...resource of US power in a dangerous world."<sup>25</sup>

Attack Uncertainty: Attack uncertainty (creating uncertainty in a potential adversary's mind that they can execute a successful attack) can be created in a number of ways. First, survivable systems such as strip alert bombers, at-sea submarines, or mobile missiles can be used. Second, an attack planning timing dilemma can be created (such as the synergism between silo ICBMs and strip alert bombers) where optimizing the attack against one leg reduces the effectiveness of the attack against the other leg.

Third, the target value can be reduced presenting less of a destruction payoff (such as 192 warheads on an submarine or 10 warheads on a Peacekeeper missile). Finally, defense can complicate the attack planning problem. It is not necessary to have all of these elements present at all times. But, these elements can be used to construct a strategic force structure and they present a series of steps that can be employed in a crisis.

Retaliation Certainty: Retaliation certainty presents a potential adversary with the certainty that we will retaliate (no

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<sup>25</sup>"Perils of the New World Order." The Washington Post Jan 1992, p A1, A?.



matter what the attack conditions) and unacceptably damage what they hold most near and dear. With the current targeting review underway, this area will change to a smaller requirement.

Fundamentally, targeting is normally divided into leadership, strategic forces, conventional forces, and war supporting industry. Based on the current review and the changed threat, it is possible to predict reductions in strategic forces associated with the START treaty and movements of nuclear weapons into Russia, dramatic reductions in conventional force targets associated with the demise of the Warsaw Pact and the division of former USSR forces among former republics, and a continuation of the historic evolution of fewer key, war supporting industry targets. Also, the review recommended "five separate plans emphasizing strikes against 'every reasonable adversary' around the globe with either nuclear or non-nuclear weapons."<sup>26</sup>

This evaluation will need to be done for all potential nuclear (or weapons of mass destruction) adversaries. It is probably time to change the structure of the Single Integrated Operational Plan away from its primary emphasis on the former USSR. One interesting approach would be to target all fast reaction alert ICBMs and SLBMs against former USSR (and other immediate threat countries) key leadership, strategic offensive forces, and a small number (200) of key conventional and war supporting

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<sup>26</sup>"Strategic Forces" The Washington Post Jan 1992, P A1.

industry targets. All other target packages (against the former USSR and other countries) would be in the form of secure reserve packages assigned to off-alert forces that generate in a crisis.

Crisis Stability: In a crisis, we again want to solve both sides of the equation. First, in peace, and as we generate forces and prepare our nation for war we need to create a situation where a potential attacker does not see an advantage from shooting first. Second, the side that is attacked must not be placed in a "use or lose" scenario. Crisis stability can be enhanced by maintaining a multiplicity of forces, through survivable basing modes and defenses, and with reduced target value of strategic systems.

Extended Deterrence: In the past, NATO conventional forces were not deemed able to defeat a Warsaw Pact attack. The NATO doctrine of Flexible Response envisioned early, first use of nuclear weapons underwritten by CONUS strategic nuclear forces. Now, with significant strategic warning, numerical parity, NATO technological superiority, and a significantly reduced threat, the NATO deterrence posture can reflect a reduced reliance on nuclear weapons. However, US nuclear weapons could still deter annihilation of states such as Israel and Taiwan, the seizure of critical raw materials, or foreign domination of space.<sup>27</sup>

Declaratory Policy: There is no need to fundamentally change the

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<sup>27</sup>Ibid., p A1.

declared policy of US strategic nuclear doctrine. "Flexible response and deterrence through the threat of retaliation" formed the foundation of US deterrent posture for decades. We seek to deter war, especially nuclear war. We seek to deter aggression that threatens US security or that of our allies. Should deterrence fail, we will defeat the attack and end the conflict on terms favorable to the US, its interest, and its allies.<sup>28</sup>

In Europe, US doctrine should evolve to a countervailing strategy seeking to deter by threatening retaliation with "in kind" forces rather than escalating to nuclear forces. The US should announce a "use as last resort" policy. This posture leaves open the "first use" option and creates uncertainty in the mind of a potential attacker. This policy could evolve to "no first use" with removal of all US/former USSR nuclear weapons from Europe.

It will be increasingly difficult to deter third world use of nuclear weapons, particularly in areas that do not involve vital US interests. But, since we all share the same planet, we can argue that any use of nuclear weapons impacts our vital interest. To deal with third world threats, our declaratory policy should be "any use of weapons of mass destruction against the US or our allies, or in areas of our collective vital interest risks retaliation with the full range of weapons available."

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<sup>28</sup>National Security Strategy of the United States. The White House, Aug 1991, p 3, 27.

The Role of Defense: Ballistic missile defense becomes important in the new world order. First, it contributes to attack uncertainty and second, a defense against limited attacks may be the only way to protect the US and its allies against accidental, unauthorized, terrorist, or third world threats. In this context, a modified GPALS (Global Protection Against Limited Strikes) should be designed to provide protection against ballistic missiles launched from anywhere against any target in the world. The system should be US developed and operated. But, it should be controlled internationally through the United Nations. Any missile launch manned or unmanned must be precoordinated, or it will be destroyed.

This system protects the US against accidental, terrorist, or unauthorized launches. It significantly enhances attack uncertainty of a potential attacker and provides additional incentives against proliferation of missiles because primitive missiles are easily destroyed by high technology defenses.<sup>29</sup>

Non-Proliferation: Non-proliferation is an increasingly important topic. Some argue we can't win this race so why try? Since it is in the US interests to limit nations with weapons of mass destruction, it is worth fighting this battle even if it is a losing battle. We must ensure technologies required for

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<sup>29</sup>National Security Strategy of the United States. The White House, Aug 1991, p 27.

weapons of mass destruction (nuclear, chemical, and biological) are strictly limited. If a nation tries to develop these technologies with indigenous resources, they should face world-wide economic sanctions and on-site inspections until the United Nations is satisfied that no threat exists.

Second, ballistic missile technology (as a means of delivering weapons of mass destruction) must be limited. China, one of the major missile technology exporters, recently agreed to "abide by an international effort to stop the spread of ballistic missiles to the Third World."<sup>30</sup> This policy will directly conflict with emerging national space programs. But, it must be strictly monitored because of the dual use potential.

Another aspect of non-proliferation is the elite former Soviet nuclear scientists and engineers who are now un/under employed. These people and their families need productive employment (e.g. dismantling nuclear weapons) and must be prevented from moving to potential Third World nuclear powers for economic reasons.<sup>31</sup>

#### OFFENSIVE FORCES

Do We Still Need A Triad: Stability should be a primary

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<sup>30</sup>Oberdorfer, Don. "China to Reinforce Pledge on Missiles." The Washington Post 2 Feb 1992, p A17.

<sup>31</sup>Huffman, David. "Atom Scientist At Ex-Soviet Lab Seek Help." The Washington Post 15 Feb 1992, p A1.

objective of US strategic force structure posture and arms control proposals. The rationale outlined in the Scowcroft Commission Report is still sound. The existence of several forces requires a potential adversary to solve different technical problems and attack timing issues if they wish to simultaneously attack US forces. In a technologically advanced world, this is still a valid argument. For the foreseeable future, the attack timing dilemma (where an attack optimized against one Triad leg significantly reduces the effectiveness against another leg) presents a real planning difficulty.<sup>32</sup>

A new issue is cost. ICBMs can be maintained at a virtually 100 percent alert rate at a fraction of the cost of SLBMs and bombers. This allows the other two legs to be maintained in peace-time at a lower, more cost effective alert postures.

Scowcroft also discussed the unique properties provided by a multiplicity of forces. Bombers can be launched as a show of force, launched on warning without being irretrievably committed, and provide the best hard target kill. They are suited to the full range of potential targets. ICBMs, are the best prompt, hard target killers and can quickly be retargeted. They are especially well suited to respond promptly against offensive forces and command/control to disrupt an attack. SLBMs offer

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<sup>32</sup>Scowcroft, Brent L., et al. Report of the President's Commission On Strategic Forces. The White House, 6 April 1983, PP 7-8.

improved prompt hard target kill and can endure for months.<sup>33</sup>

Strategic Force Modernization: The force modernization dilemma we face now is similar to the one the US faced after the force structure decisions made by the Carter administration. Putting aside discussions of requirements, the nation found it had moved from a situation where we planned to modernize one Triad leg at a time to a situation early in the first Reagan administration where we tried to modernize all three legs simultaneously. Now, we have the additional cost of strategic defenses. To resolve the cost issue, provide for deterrence in a reduced threat environment, and move to a more stable world, this paper proposes dramatic force structure and policy changes.

A strategic defense should be deployed. It should be operated under the auspices of the United Nations and developed and deployed by the US. This system is similar to the joint Russia/US SDI system proposed recently by Yeltsin, but would be UN controlled for the good of all countries.<sup>34</sup> Departing from the Bush administration policy, the currently proposed GPALS system should be redesigned to be compatible with the 1972 ABM

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<sup>33</sup>Ibid., p 8.

<sup>34</sup>Guillard, Ralph Jr. "Nuclear Disarmament." The Washington Post 30 Jan 1992, p A18.

treaty for the initial phase of the deployment.<sup>35</sup>

Space-based system research should continue with treaty compliant testing through at least 2000. The initial ground-based system should be operational by the year 2000. Treaty compliance and world-wide coverage is essential for international support. A ground-only initial phase and stretching the deployment to 2000 will reduce cost in the mid-90's.

Despite the recent budget decisions, the US should deploy the B-2 bomber. The START treaty allows a fundamental advantage for penetrating bombers by counting them as one accountable weapon. This encourages both sides to move towards more stable force structures. Also, penetrating bombers have a significant conventional role. Stealth technology has fundamentally changed the nature of war and is essential for any future penetrating bomber. It works, and we know how to do it. The program should aim for about four wings, or about 60 aircraft.

The B-1 should remain in a penetrate only role and be certified for conventional munitions as soon as possible. All B-52G's should be retired and B-52H's should evolve to 75 Common Strategic Rotary Launcher (CSRL) equipped aircraft with 20 ACM. Day-to-day, bombers should not be on strip alert. In START II,

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<sup>35</sup>Smith, R. Jeffrey. "US Moves Away From ABM Treaty." The Washington Post 26 Jan 1992, p A1.



we should aim for 100 penetrating bombers (all stealth) and 80 external only (12 loaded) ACM carriers (capable of internal conventional loads).

ICBM force structure for START I should attempt to reduce the average number of warheads per launcher to less than 2.0 (because that is the number of weapons a conservative attack planner would allocate per silo). This results in a force that presents no mathematic attack incentive. The force for START I should evolve to 50 Peacekeeper missiles with 500 warheads and 500 single warhead Minuteman with 500 warheads for a total of 550 missiles with 1000 warheads. In the long term, Peacekeeper can be retired in exchange for all former USSR MIRVed missiles and the Small ICBM missile should be developed as a silo replacement for Minuteman in the year 2000. A START II ICBM force could include 500 Small ICBMs split between 300 in Minuteman silos and 200 in Hard Mobile Launchers on Minuteman silos.

Advanced research should continue for ballistic missile defense penetration aids and maneuvering (for accuracy and evasion) reentry warheads. Also, we should consider deploying Small ICBMs in a mobile basing mode in the year 2010 in conjunction with a START II treaty. This approach reduces average loading to 1.8 weapons per missile, a significant reduction in the target value. START II should aim for elimination of MIRVed ICBMs and a weapon loads of 1.0. Also, mobile ICBMs should be allowed in an easily

verifiable mobile basing mode such as Hard Mobile Launchers based on Minuteman silos.

The SLBM force should evolve to 18 Trident submarines each with 24 Trident I or II missiles with 8 warheads each. This results in 3456 warheads on 432 missiles. The force structure should not backfit the D-5 missile into C-4 equipped boats. This will give us a two missile force and hedge against unforeseen reliability problems. D-5 missile production should be limited to test assets and then stopped.

In the long-term, START II should evaluate reducing SLBM missile loadings to 4 warheads per missile and submarine research should focus on smaller boats (12-18 missiles and 48-72 warheads per boat vice the 192 warheads per boat today). In START II, 30 smaller submarines, each with 12 missiles loaded at 4 warheads per missile would provide more, lower value platforms (48 warheads per boat), 360 missiles, with 1440 accountable warheads.

Allied Nations: Sovereign nations will take actions to ensure their vital interests are protected. Despite Yeltsin's plea for other nuclear powers to cut their forces, both Britain and France see no reason to trim their arsenals. Our goal should be to allow modernization (such as Britain's plans to build four

Trident boats to replace its aging Polaris fleet.<sup>36</sup> But, as the US and former USSR contemplate START II type cuts, we cannot allow any growth in other arsenals. This will probably require including all nuclear nations in any SALT II negotiations.

Another often avoided subject is the long-term potential of a unified Germany or Japan developing strategic nuclear forces. As long as these nations feel that their security needs are satisfied within current alliance arrangements, the potential for them building their own nuclear forces is reduced. Historically however, economic competition has frequently led to military conflict. Since economic competition with Germany and Japan is inevitable, the US must pay special attention in this area.

#### ARMS CONTROL

Crisis Stability: The START I treaty allows 1600 delivery vehicles carrying 6000 accountable weapons for a ratio of 3.75 accountable weapons per delivery vehicle. START I also enhances stability by moving force structures away from heavy (SS-18) ICBMs (reduced by 50 percent), encouraging slower systems (penetrating bombers), and moving to forces with less weapons per platform. START II should continue that trend but try to get average loadings to about 2.5 weapons per platform.

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<sup>36</sup>Frankel, Glenn. "Britain to Expand Nuclear System." The Washington Post 30 Jan 1992, p A19.

START II Philosophy: The general philosophy of START II should be 50 percent cuts, crisis stability, and inclusion of all nuclear nations. The goal should be for a treaty that is signed by 2000 and completes all force structure drawdowns by 2010. Limits should be in the range of 1000 delivery vehicles carrying 3000 accountable weapons. Bomber counting rules should stay the same and mobile missiles should be allowed. This approach will force the US and Russia to a balanced Triad of mobile single warhead missiles, smaller submarines, and penetrating bombers.

Proliferation: Proliferation of ballistic missile technologies and weapons of mass destruction should continue with the same policies and will hopefully be effective with the deployment of GPALS. Special emphasis should focus on including the arsenals of other nuclear nations in a START II agreement.

Defense: The START II treaty should include an amendment to the ABM treaty to include all nations with ABM technologies and allowing testing and deployment of space-based systems.

#### COMPETITIVE STRATEGIES

The classic definition of arms control stability is that your country chooses which technology areas in which it wants to compete and negotiates those areas that it wants protection from competition in. With the strategic vision articulated in this

paper, there are several competitive strategies which the US should pursue to leverage the capability of our strategic forces.

Stealth: The US must maintain its advantage in all aspects of stealth technology. Stealth characteristics will be incorporated in all future land, sea, and air systems. Research should also continue on sensors to detect stealthy systems. The US should also strive to maintain its lead in optical sensor technology.

Defense: The US must continue research in ground/space-based ballistic missile defenses. Special emphasis should be placed on space-based sensors and battle management systems.

Penetration Aids: To hedge against an uncertain world with ballistic missile defenses, the US needs to significantly upgrade the amount of research it does on ballistic missile penetration aids to include protective booster coatings, fast burn boosters, fast deploying/stealthy post-boost vehicles, and advanced penetration aids for reentry vehicles.

#### OBSERVATIONS

In conclusion, our nation needs to develop a vision of the post-2000 strategic nuclear world we want to live in. With that vision, we should employ all elements of national power to help that vision come true. Our nation has a once in a lifetime

opportunity to influence the strategic nuclear survivability of the world and we should not let it slip away.

The world we will live in will in many ways be more dangerous than the bi-polar confrontation of the Cold War. When combined with sophisticated weapons and weapons of mass destruction in the Third World, we will find many potential threats to our vital interests. To blindly assume that mankind will some how forget how to make nuclear weapons is naive. So, it is imperative that we act to create the secure world we prefer rather than to rush towards bi-polar nuclear disarmament.

Our deterrent philosophy is sound. But, we need to change the ways we do business in Europe, the Third World, in space, and in our planning and targeting. Most important, we have the opportunity to create a stable deterrence at substantially reduced force levels. But, we should not forget the complex force structure lessons we learned in the evolution of the Triad. The uncertain world we will live in needs a balanced, and robust Triad as much as we ever did.